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AMSAT NEWS SERVICE
ANS-235

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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ANS-235 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 235.01
  From AMSAT HQ Kensington, MD.
August 23, 2015
To All RADIO AMATEURS
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Launch Date for AMSAT Fox-1A

Jeru Buxton, N0JY, AMSAT Vice President of Engineering advises that AMSAT has
been informed that the launch of Fox-1A is now scheduled for October 8.
No other details are available at this time.

[ANS thanks Jerry, N0JY, for the above information]

Satellite Antennas and the Amateur Radio Parity Act of 2015

AMSAT members are encouraged to contact their congressional representatives and senators, asking them to sign on to The Amateur Radio Parity Act of 2015 as a co-sponsor. Passage of the Act (currently consisting of bills in both the House and Senate) will directly benefit AMSAT members and likely help us grow our membership numbers.

Putting satellites in orbit is only half the challenge of "working the birds." Reaching them with an appropriate ground station is the other half. Many of us living in housing developments, condos or apartments would love to have a fixed station antenna system but are severely limited by restrictive CC&Rs that forbid outside antennas. We are relegated to working ISS, SO-50 and future LEO satellites with Arrows, Elks and HTs.

The Radio Amateur Parity Act of 2015 would not give Amateurs "carte blanche" to do whatever they wished in terms of erecting radio antennas where they now are prohibited. But it would eliminate blanket prohibitions, requiring HOAs and other private land use regulators to extend reasonable accommodation to Amateurs who want to erect antennas.

The ARRL is leading on this issue for the larger Amateur Radio community. Sample letters for the U.S. House and Senate, along with instructions for their use. can be found at this link:

http://www.arrl.org/amateur-radio-parity-act

[ANS thanks Joe Neil Kornowski, KB6IGK for the above information]

CubeSat Developers' Workshop Presentations Online

The 12th Annual Summer CubeSat Developers’ Workshop was a great success!! The Workshop feedback has been amazing, and truly underscores the efforts of all who participated, from the engaging, entertaining, and provocative technical presentations to the incredible networking opportunities.

Thank you to all Presenters, Attendees, Sponsors, Live Stream Viewers, and Organizers! Your contribution was invaluable to the success of the Workshop and greatly appreciated!

For those of you who could not make it, or for those of you who want to review what you saw, all presentations can be found online on cubesat.org with a
link to the video of the presentation.

Please join us at the 13th Annual Spring Developers’ Workshop at Cal Poly in San Luis Obispo, CA from April 20-22, 2016.

[ANS thanks The CubeSat Workshop Team for the above information]

JAXA H-II Transport Vehicle to Deliver Two ESA Cubesats

Japan Aerospace Exploration Agency's (JAXA) launch of its H-II Transport Vehicle (HTV)-5 to the International Space Station on Wednesday, Aug. 19 included two cubesats. These satellites will then be deployed together into space in the first half of September, with the involvement of Danish ESA astronaut Andreas Mogensen. Both CubeSats originated from Denmark.

GOMX-3 is a 3U Cubesat. The mission and its payloads will be used for story telling and teaching. It will include an ADS-B receiver, magnetometer data, solar cells and green energy and radio operation. An experimental X Band transmitter plus an SDR receiver will also be carried.

GOMX-3 downlink: 437.250 MHz with 1k2-9k6 GMSK data from a NanoCom AX100 using CSP protocol.

AAUSAT-5 is a 1 unit cubesat. The primary mission is to receive AIS beacons from ships with a new design based on AAUSAT-3. In addition to that a educational payload for high school outreach was designed by engineering students. The AIS receiver payload is based on SDR principles. Once deployed from the ISS it is expected to remain in orbit for approx 6 months.

AAUSAT-5 downlink: 437.425 MHz, GMSK telemetry.

Danish Ministry of Science and Education, House of Natural Sciences
http://nvhus.dk/house-of-natural-sceinces.aspx

ESA Cubesat launch announcement:
http://tinyurl.com/ESA-Gomx

SpaceRef.com article about AAUSAT-5:
http://tinyurl.com/AAUSAT-Article

[ANS thanks ESA for the above information]

IARU Coordination of Satellite Frequencies

The IARU have announced they are committed to only coordinate satellite frequencies within the internationally aligned IARU band plans.

The two metre amateur band is one of the most popular and populated bands in all
the spectrum allocated to the amateur and amateur satellite services. This recently led to a request by satellite builders for coordination outside the spectrum reserved for satellites in the IARU band plans (145.800 – 146.000 MHz)
as not enough channels are available to satisfy their requirements.

The IARU Satellite Adviser, Hans van de Groenendaal, ZS6AKV and his advisory panel are mandated to coordinate frequencies within the IARU band plans for amateur satellites. Coordinated frequencies must comply with band plans that are
common to all three IARU Regions Satellites coordinated outside these plans could cause interference to terrestrial amateur operations in other regions. In
theory satellites could be programmed so that they only operate over their country of origin. Because satellite orbits make it difficult to pinpoint operations, spill over to other Regions may occur during parts of the orbit. Accordingly, IARU will not coordinate frequencies for satellites which are planned to operate outside the internationally aligned IARU band plans for amateur satellites.

The IARU offers frequency coordination in an effort to maximise spectrum utilisation and avoid possible interference to other satellites and ground stations.

The IARU requests that satellite groups work on a sharing plan or use other parts of the amateur service spectrum designated for satellite operation. When a
large group of satellite sharing the same band are launched, they will soon drift apart which enhances the opportunity to share the same frequencies. For

example, during the initial phase, just after launch, a time sharing system could be used to monitor the payloads before initialising transponders and other systems.

For instance, the 10 metre band, once popular with satellite builders, is today not significantly used. The band segment 29.300-29.510 MHz has been used for amateur-satellite downlinks for more than 40 years, beginning with Australis-OSCAR 5 in 1970 and AMSAT-OSCAR 6, AMSAT's first communications satellite, in 1972. The band segment was very popular for downlinks in the 1970s and 1980s.
Today, only one amateur satellite actively uses a 29 MHz downlink: AMSAT-OSCAR 7, launched in 1974 [and RS-15 on 29.3525 MHz – Editor]. While a 29 MHz downlink would not be practical for today's very small satellites, owing to the size of the antenna required, the band could be used very practically for uplinks even with small receiving antennas, because transmitting power at the earth station is easy to obtain. The IARU Satellite Adviser and his panel believe that the 10 metre band offers a good alternative to 2 metre uplinks

Currently the IARU team also coordinates frequencies for satellites built by universities and educational groups in an effort to maximise spectrum utilisation and mitigate any possible interference to Amateur Radio operations.
The IARU is committed to work with these groups and with the ITU to find other spectrum for these satellites.

Rod Stafford W6ROD
Secretary
International Amateur Radio Union (IARU)

[ANS thanks Rod, W6ROD, for the above information]

IARU Region 3 Act on Band Plan Satellite Allocations

The IARU Region 3 (Asia/Pacific) Directors have submitted a band plan paper concerning amateur satellite allocations for consideration at the IARU Region 3 Conference which takes place October 12-16 in Bali, Indonesia.

This is the 16th Conference and it will be hosted by the Amateur Radio Organisation of Indonesia (ORARI). 60 Premier and 12 Suite hotel rooms have been booked at the Sanur Paradise Plaza Hotel which is described as being situated in Sanur, the secretly sophisticated side of Bali.

ORARI plans to run a special event station YB16IARU from October 11-16 from the conference and the delegates will be taken on a tour of Bali.

The President of ORARI, Sutiyoso YB0ST, says: "It's an exciting time for us as we continue to grow and thrive, remaining always adaptable, motivated and

responsive. The world of amateur radio is an exciting area in which to work and
play, and we'll continue to meet and bring inspired people together in forums
like this, to ensure IARU Region 3 remains at the cutting edge."

The changes proposed by IARU Region 3 Directors would appear to prohibit the use
of the Amateur Satellite Service channel 144.490 MHz as an uplink for crewed
space missions. Use of this channel was agreed by IARU Region 3 some 20 years
ago but the new paper says:

"Note 2: The other portion of the band 144.035-145.8 MHz is exclusively
identified for the amateur service."

At the same time IARU Region 3 had agreed the crewed space mission downlink
channel would be 145.800 MHz using 5 kHz deviation FM with a Doppler shift of
+/- 3.75 kHz. The paper does not record this.

Read the IARU R3 Directors amateur satellite band plan paper at
http://www.iaru-r3.org/16r3c/docs/022%20Modification%20to%20R3%20Band%20Plan.docx

The Wireless Institute of Australia (WIA) have presented a satellite band plan
paper, see
http://www.iaru-r3.org/16r3c/docs/023%20Changes%20to%20R3%20Bandplan.docx

Other papers submitted for the conference may be seen at
http://iaru-r3.org/16th-triennial-conference-of-the-iaru-r3-documents/

16th IARU R3 Conference http://www.iarur3conf2015.org/

IARU Coordination of Satellite Frequencies
http://amsat-uk.org/2015/08/20/iaru-coordination-of-satellite-frequencies/

[ANS thanks AMSAT-UK for the above information]

AMSAT Satellite Communications Awards

Bruce Paige, KK5DO, AMSAT Director Contests and Awards provided the following
corrected list of AMSAT Satellite Communications Award recipients as an update
to the list previously published in ANS-228.

  Steve Kristoff, AI9IN #564
  Frank Westphal, K6FW #565
  Fraser Bonnett, W3UTD #566
  Carlton Noll, KA4H #567 (also a new member to AMSAT)

[ANS thanks Bruce, KK5DO, for the above information]

Send Your Name to Mars on NASA's Next Red Planet Mission

Mars enthusiasts around the world can participate in NASA’s journey to Mars by adding their names to a silicon microchip headed to the Red Planet aboard NASA's InSight Mars lander, scheduled to launch next year.

"Our next step in the journey to Mars is another fantastic mission to the surface," said Jim Green, director of planetary science at NASA Headquarters in Washington. "By participating in this opportunity to send your name aboard InSight to the Red Planet, you're showing that you're part of that journey and the future of space exploration."

Submissions will be accepted until Sept. 8. To send your name to Mars aboard InSight, go to:

http://go.usa.gov/3Aj3G

The fly-your-name opportunity comes with “frequent flier” points to reflect an individual's personal participation in NASA’s journey to Mars, which will span multiple missions and multiple decades. The InSight mission offers the second such opportunity for space exploration fans to collect points by flying their names aboard a NASA mission, with more opportunities to follow.

Last December, the names of 1.38 million people flew on a chip aboard the first flight of NASA's Orion spacecraft, which will carry astronauts to deep space destinations including Mars and an asteroid. After InSight, the next opportunity to earn frequent flier points will be NASA's Exploration Mission-1, the first planned test flight bringing together the Space Launch System rocket and Orion capsule in preparation for human missions to Mars and beyond.

InSight will launch from Vandenberg Air Force Base, California in March 2016 and land on Mars Sept. 28, 2016. The mission is the first dedicated to the investigation of the deep interior of the planet. It will place the first seismometer directly on the surface of Mars to measure Martian quakes and use seismic waves to learn about the planet's interior. It also will deploy a self-hammering heat probe that will burrow deeper into the ground than any previous device on the Red Planet. These and other InSight investigations will improve our understanding about the formation and evolution of all rocky planets, including Earth.

For additional information about the InSight mission, visit:

http://www.nasa.gov/mission_pages/insight/main/index.html

You can follow the mission on Facebook and Twitter at:

https://www.facebook.com/NASAInSight

and

https://twitter.com/nasainsight

[ANS thanks NASA for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
Lee McLamb, KU4OS
ku4os at amsat dot org